MDR-RF950

SERVICE MANUAL

US Model
Canadian Model

Ver 1.0 1998. 06

MDR-RF950 is headphones
in MDR-RF950RK.

SPECIFICATIONS

General

Carrier frequency	913.0 – 915.0 MHz
Channel	Ch1, Ch2, Ch3
Modulation	FM stereo
Frequency response	18 – 22,000 Hz

Headphones

Power source	DC 3 V: 2 × R6 (size AA) battery or 2 × supplied NC-AA-HJ Ni-Cd rechargeable battery
Mass	Approx. 265 g (9.4 oz.) incl. Ni-cd batteries

Design and specifications are subject to change without notice.

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Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

WIRELESS STEREO HEADPHONES

MICROFILM

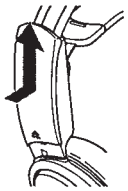
SONY®

This section is extracted from instruction manual.

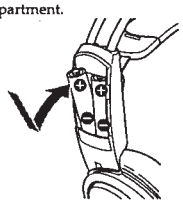
SECTION 1
GENERAL

Setting up the headphones

1 Open the battery compartment lid on the left outer side of the head band.



2 Insert two charged NC-AA-HJ batteries by matching the ⊕ and ⊖ on the batteries to the ⊕ and ⊖ in the battery compartment.



3 Close the battery compartment lid.

Using the headphones with a commercially available size AA (R6) dry batteries
Install the batteries in the manner as described in "Setting up the headphones."

Battery life

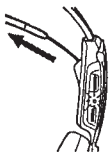
Battery	Approx. hours*
Sony alkaline battery SG (LR6)	60
Sony battery SR (R6P)	30

* at 1 kHz, 1 mW + 1 mW output

Notes on batteries
To avoid damage to the system caused by battery leakage and corrosion;
- Install the batteries with the correct polarity.
- Do not try to recharge dry batteries.
- Remove the batteries if the system is not to be used for a long period of time.

In case of battery leakage, wipe off any deposit in the battery compartments before installing new batteries.

Check the remaining power of the headphones' battery
Pull up the self adjusting band, and check that the headphones' power indicator lights in red. You can now use the headphones.
Charge the battery or install a new dry battery, if the power indicator light is weak or turned off and the sound become distorted or has a lot of noise.



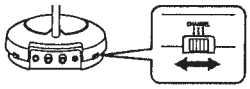
Notes
- During recharging, the transmitter is turned off.
- When the life of the rechargeable batteries are shortened by half even after a proper recharging, replace them with new NC-AA-HJ batteries.

► *Operating the system*

Listening to a program

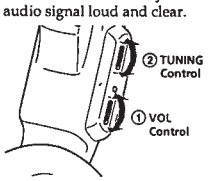
1 First turn on the audio/video equipment, then the transmitter.

2 Select the radio frequency with the CHANNEL selector switch.



3 Put on the headphones and the power turns on automatically.

4 Turn up the volume to a moderate level with the VOL control, then tune the headphones to the transmitte frequency with the TUNING control until you can hear the audio signal loud and clear.



Try the above steps 2 and 4 until the receiving performance becomes better.

Sending RF signals from the Transmitter
The transmitter starts sending the RF signals automatically, when the transmitter power is turned on, and audio signals from the connected equipment is detected.
If it does not detect an audio signal for more than approximately five minutes, the transmitter will stop sending RF signals.
But the Power indicator remains lighting. When the transmitter receives an audio signal again, it starts sending the RF signals.
If the audio signal is very weak, the transmitter does not send RF signals automatically. In this case, make sure the volume of the equipment connected is set to 5 – 6.
You may not hear the beginning of the sound from the headphones until the transmitter starts sending the RF signals after detecting an audio signal.

Note
If the transmitter is connected to the headphones jack of the source equipment, set the volume of that equipment as high as possible without distorting the audio signal.

Auto power on/off function
When you remove the headphones, the power turns off automatically. Do not allow the self adjusting band to be pulled up, otherwise the headphones will be switched on.

The power turns on.

The power turns off.

Mute function
If a hissing noise is heard when the headphones are used outside of the effective range (see the next section), the mute function will be activated and the sound will not be heard from the headphones. To restore the sound, move near toward the transmitter.

After listening to a program
Take the headphones off and rest them away on the holder of the transmitter as shown below.

Note
Do not hang the headphones by the self adjusting band, otherwise, the self adjusting band will be pulled up and the headphones will be switched on.

The effective areas of the transmitter

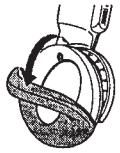
The optimum distance is up to approximately 150 feet (46 m) without the system picking up some interference. However, the distance may vary according to the surroundings and environment. If the system picks up some noise while using it within the above mentioned distance, reduce the distance between the transmitter unit and the headphones, or select the other channel.

Notes
- When you use the headphones inside the effective areas of the transmitter, the transmitter can be placed in any direction from the listener.
- Even within the signal reception area, there are some spots (dead spot) where the RF signal can not be received. This characteristics is inherent to RF signals, and does not indicate malfunction. By slightly moving the transmitter, location of the dead spot can be changed.

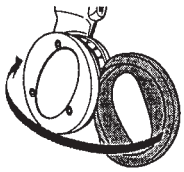
Replacing the ear pads

When the ear pads become dirty or damaged, you can get replacements from your Sony dealer. Replace them as illustrated below.

1 Remove the old ear pad by pulling it out of the groove on the housing.



2 Place the new ear pad on the driver unit and insert the edge of the pad into the groove as illustrated.



Make sure that the entire edge of the ear pad is securely inserted into the groove.

► *Additional information*

Precautions

- When the headphones are not to be used for a long period of time, remove the batteries to avoid damage caused by battery leakage and subsequent corrosion.
- When the transmitter is not to be used for a long period of time, disconnect the AC power adaptor from the AC outlet holding the plug. Do not pull on the cord.
  Also remove the batteries to avoid damage caused by battery leakage and subsequent corrosion.
- Do not leave the wireless stereo headphone system in a location subject to direct sunlight, heat or moisture.

Notes on headphones
Preventing hearing damage
Avoid using headphones at high volume. Hearing experts advise against continuous, loud and extended play. If you experience a ringing in your ears, reduce the volume or discontinue use.

Caring for others
Keep the volume at a moderate level. This will allow you to hear outside sounds and to be considerate to the people around you.

If you have any questions or problems concerning the system that are not covered in this manual, please consult the nearest Sony dealer.

Be sure to bring the headphones and the transmitter to the Sony dealer when requiring repair work.

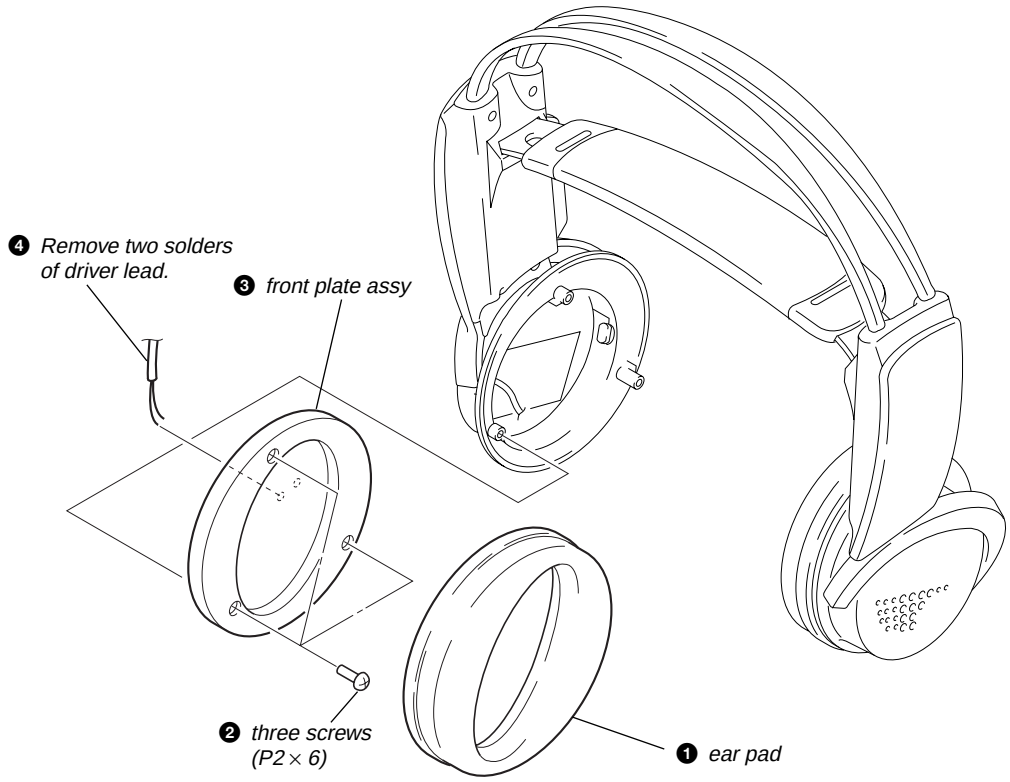
SECTION 2
DISASSEMBLY

• This set can be disassembled in the order shown below.

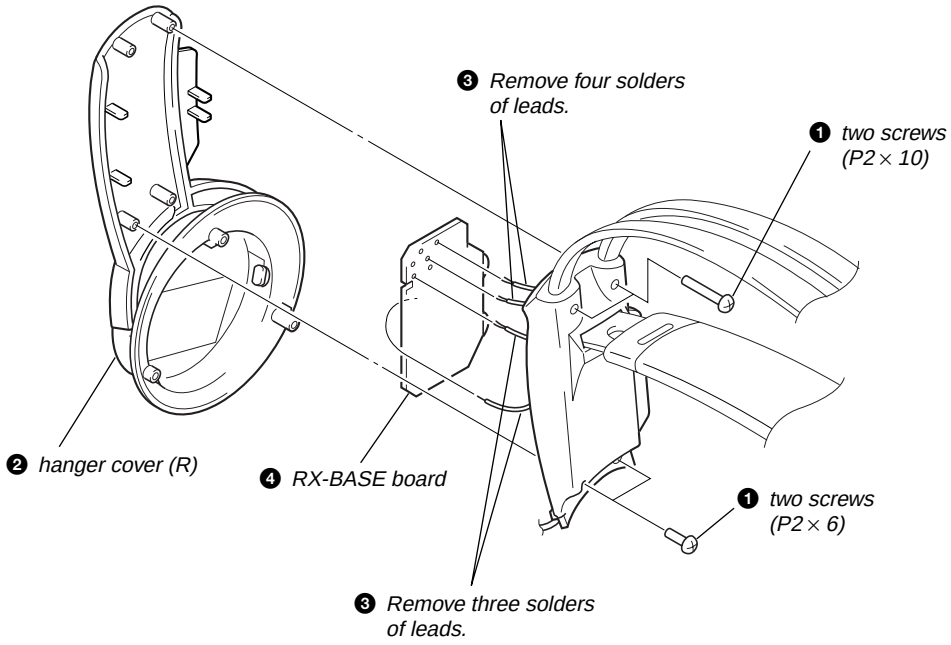
SET → FRONT PLATE ASSY → RX-BASE BOARD → SW BOARD
FRONT PLATE ASSY → HANGER COVER (L)

Note: Follow the disassembly procedure in the numerical order given.

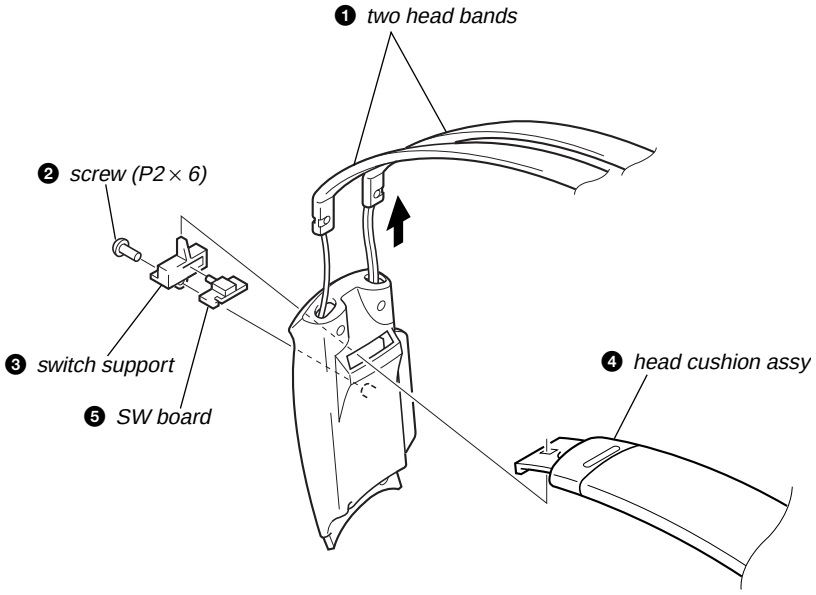
FRONT PLATE ASSY



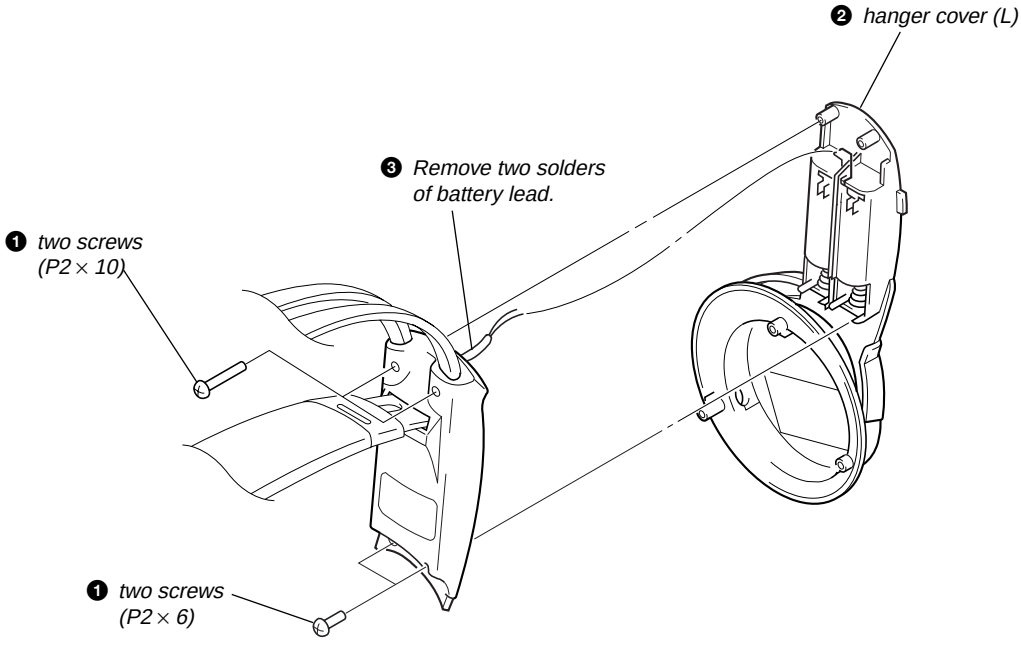
RX-BASE BOARD



SW BOARD



HANGER COVER (L)

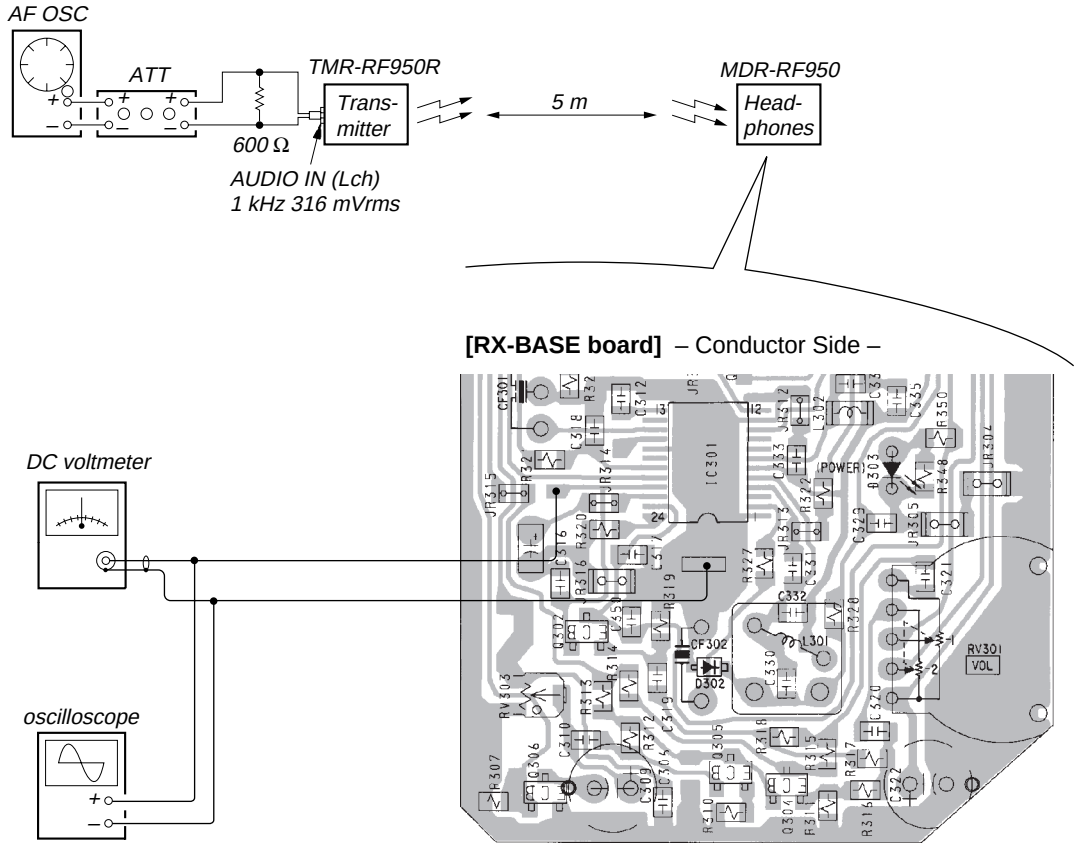


SECTION 3
ELECTRICAL ADJUSTMENTS

Note:
1. The adjustments should be performed in the order given.
2. The transmitter (TMR-RF950R) already checked and adjusted should be used.

3-1. Receiving Frequency Check and Adjustment

Preparation:

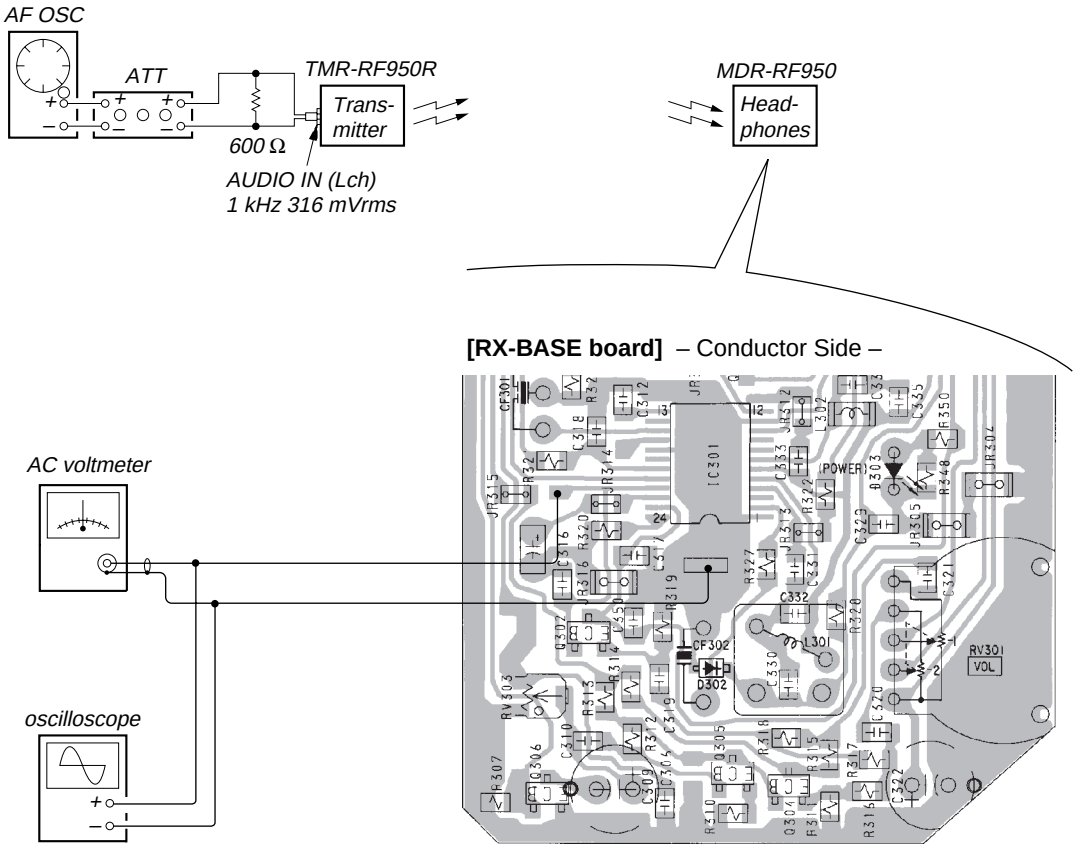


Procedure:
1. Set the channel of the transmitter to CH2.
2. Turn OFF the noise filter switch on the transmitter.
3. Enter 1 kHz 316 mVrms signal only to the Lch on the transmitter.
4. Place the transmitter away from the headphone (MDR-RF950) more than 5 m.
5. Set the volume control (RV301) on the RX-BASE board to the minimum position.
6. Set the tuning control (RV302) on the RX-BASE board to the center position.
7. Connect a DC voltmeter and an oscilloscope between IC301 pin ㉑ and ground on the RX-BASE board.
8. After confirming that demodulated 1 kHz waveform (about 13 mV) appears on the oscilloscope, check that the DC voltmeter indicates DC1 V to 1.2 V.
9. If demodulated 1 kHz waveform does not appear on the oscilloscope, or if the voltage is out of the specified value, adjust the air-core coil (L301) on the RX-BASE board so that the demodulated 1 kHz waveform appears on the oscilloscope, and under this condition, adjust finely the air-core coil (L301) so that the DC voltmeter indicates DC1.1 V.
10. Finally, check that signals are received when the channel is changed over to CH1/CH3 on the transmitter, then when the tuning control (RV302) on the RX-BASE board is rotated.

Adjustment Location: RX-BASE board (See page 9.)

3-2. Degree of Modulation of Main Carrier (L + R) Check and Adjustment

Preparation:



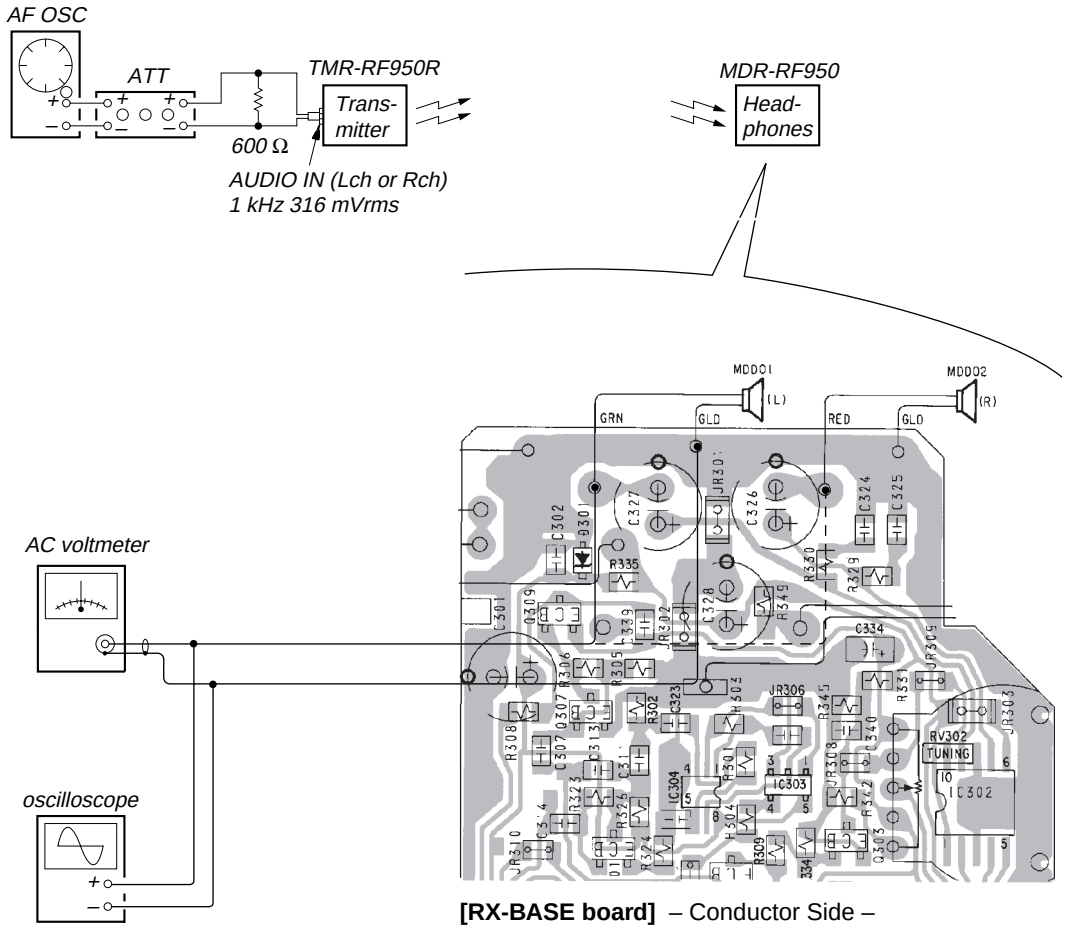
Procedure:

1. Set the channel of the transmitter to CH2.
2. Turn OFF the noise filter switch on the transmitter.
3. Enter 1 kHz 316 mVrms signal only to the Lch on the transmitter.
4. Set the volume control (RV301) on the RX-BASE board to the minimum position.
5. Connect an AC voltmeter and an oscilloscope between IC 301 pin ㉑ and ground on the RX-BASE board.
6. Rotating the tuning control (RV302) on the RX-BASE board, receive signals.
7. After confirming that demodulated 1 kHz waveform appears on the oscilloscope, check that the AC voltmeter indicates 12 mVrms to 15 mVrms.
8. If out of the specified value, rotate RV404 on the TX-BASE board in the transmitter (TMR-RF950R) so as to attain 13.5 mVrms.

Adjustment Location: TX-BASE board in the transmitter (TMR-RF950R) (See page 8.)

3-3. Separation Check and Adjustment

Preparation:



Procedure:

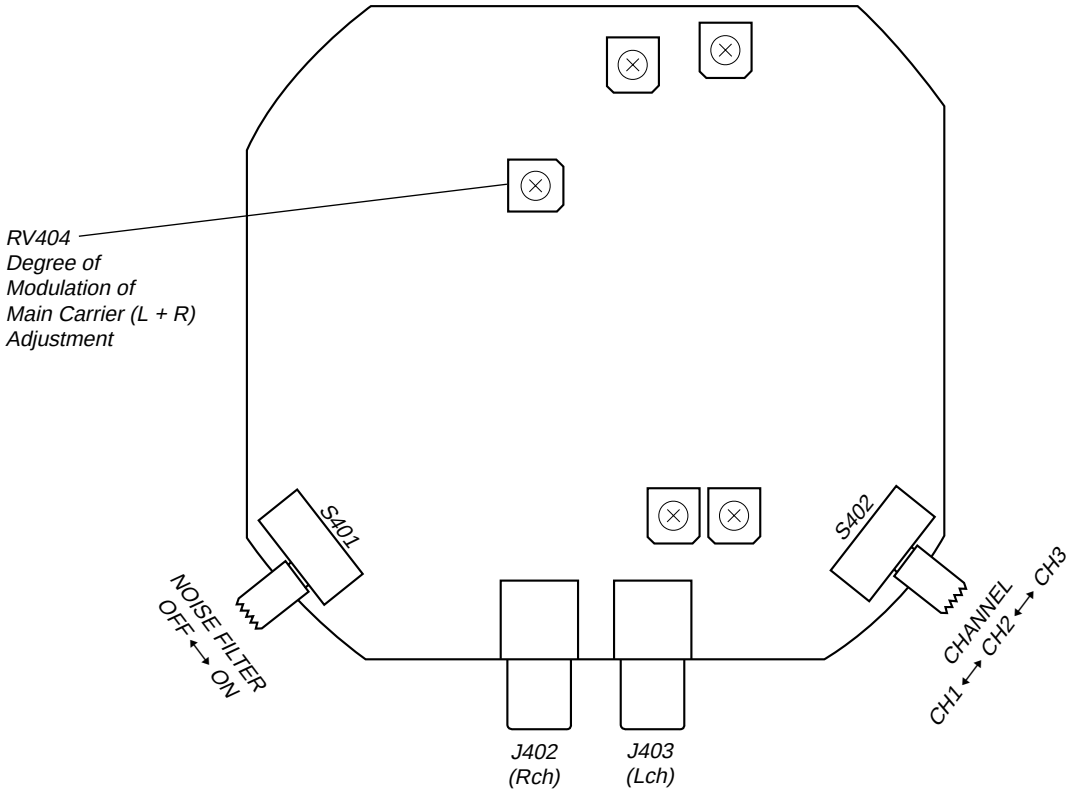
1. Set the channel of the transmitter to CH2.
2. Turn OFF the noise filter switch on the transmitter.
3. Enter 1 kHz 316 mVrms signal only to the Lch on the transmitter.
4. Connect an AC voltmeter and an oscilloscope to the Lch speaker output (both ends of MDD01) on the RX-BASE board.
5. Rotating the tuning control (RV302) on the RX-BASE board, receive signals.
6. Adjust the volume control (RV301) on the RX-BASE board so that the Lch speaker output (both ends of MDD01) on the RX-BASE board becomes 155 mVrms.
7. Connect an AC voltmeter and oscilloscope to the Rch speaker output (both ends of MDD02) and measure voltage.
8. Check that a difference in speaker output level between Lch and Rch (i. e., separation) is over 20 dB. If not over 20 dB, rotate RV303 on the RX-BASE board to minimize the Rch output, then reconfirm that a difference in speaker output level between Lch and Rch is over 20 dB.
9. Enter 1kHz 316 mVrms signal only to the Rch on the transmitter.
10. Adjust the volume control (RV301) on the RX-BASE board so that the Rch speaker output (voltage across MDD02) on the RX-BASE board become 155 mVrms.
11. Connect an AC voltmeter and oscilloscope to the Lch speaker output (both ends of MDD01) and measure voltage.
12. Check that a difference in speaker output level between Lch and Rch (i.e., separation) is over 20 dB.

Adjustment Location: RX-BASE board (See page 9.)

Adjustment Location:

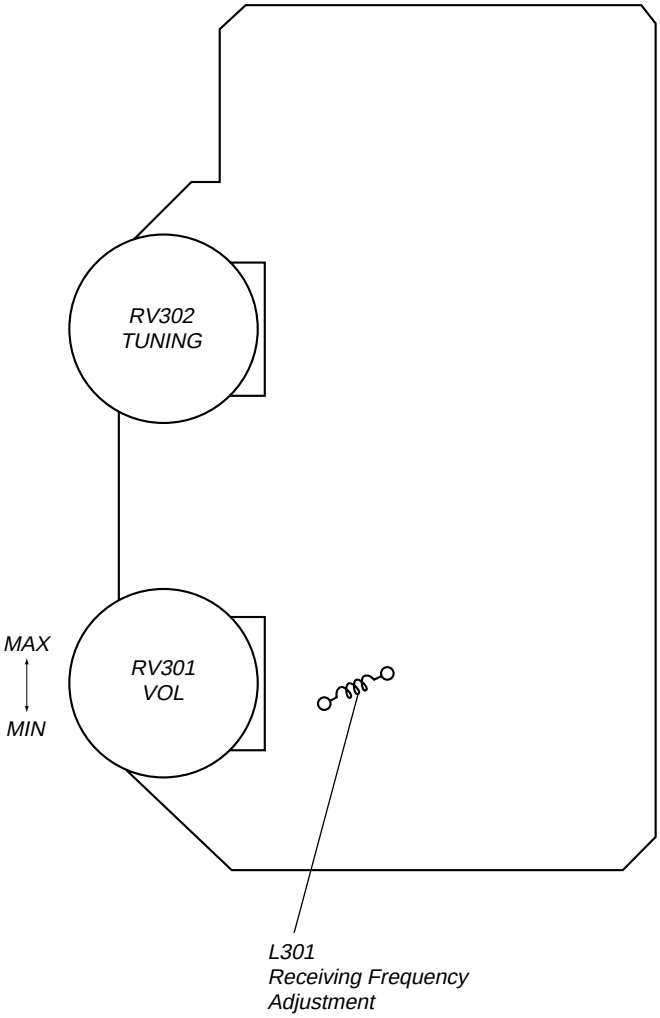
Transmitter (TMR-RF950R)

[TX-BASE board] – Component Side –

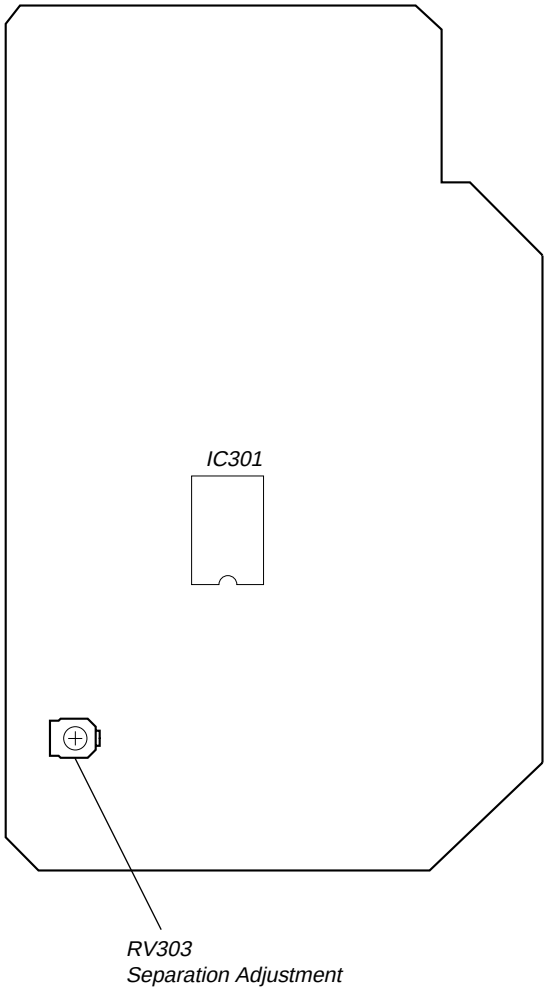


Headphone (MDR-RF950)

[RX-BASE board] – Component Side –



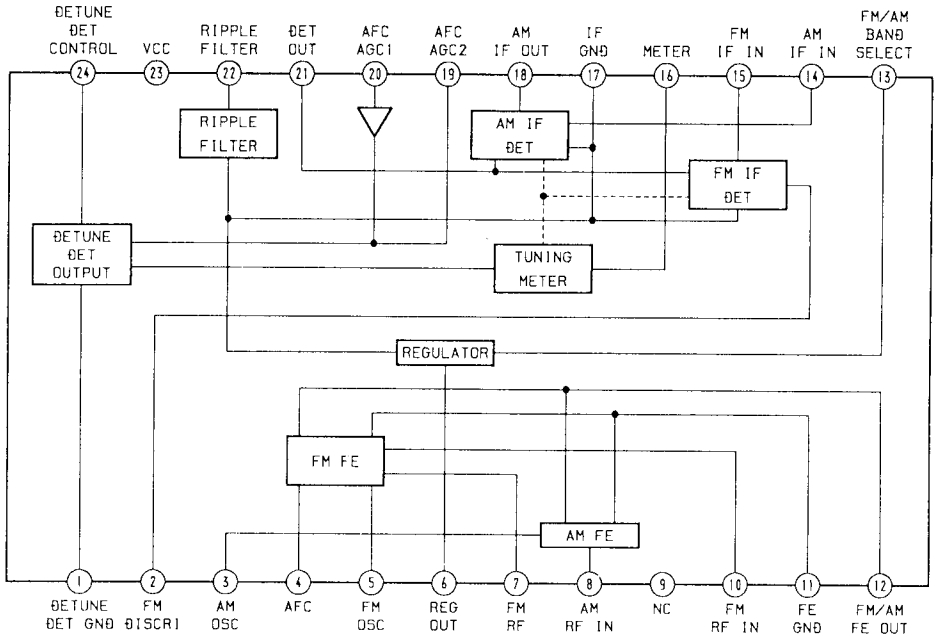
[RX-BASE board] – Conductor Side –



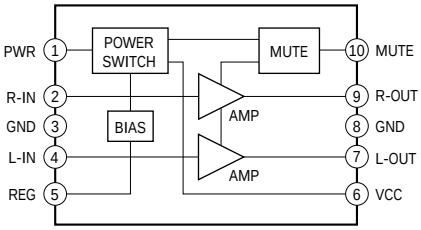
SECTION 4
DIAGRAMS

• IC Block Diagrams

IC301 CXA1611N-T4



IC302 LA4533M

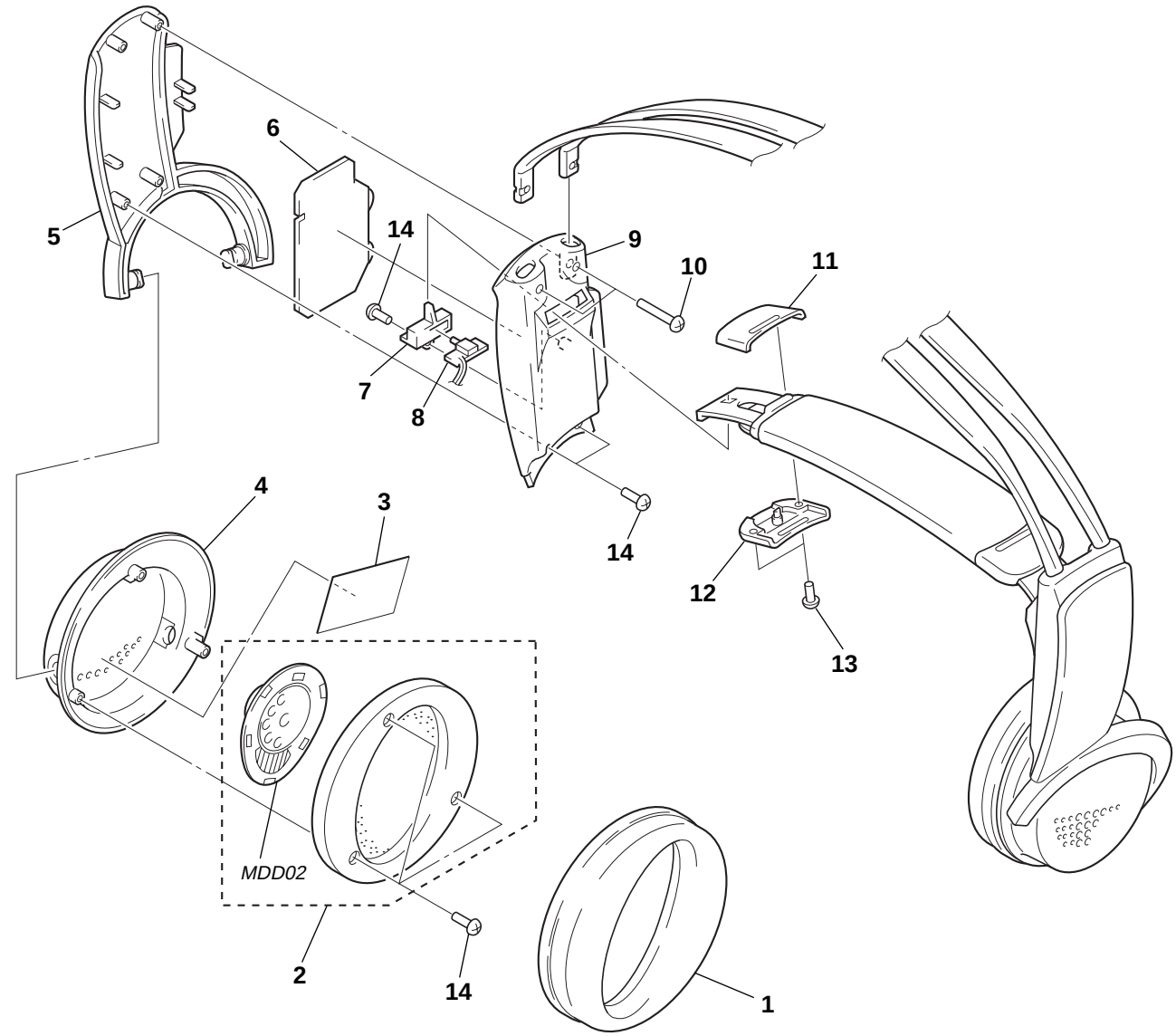


SECTION 5
EXPLODED VIEWS

NOTE:

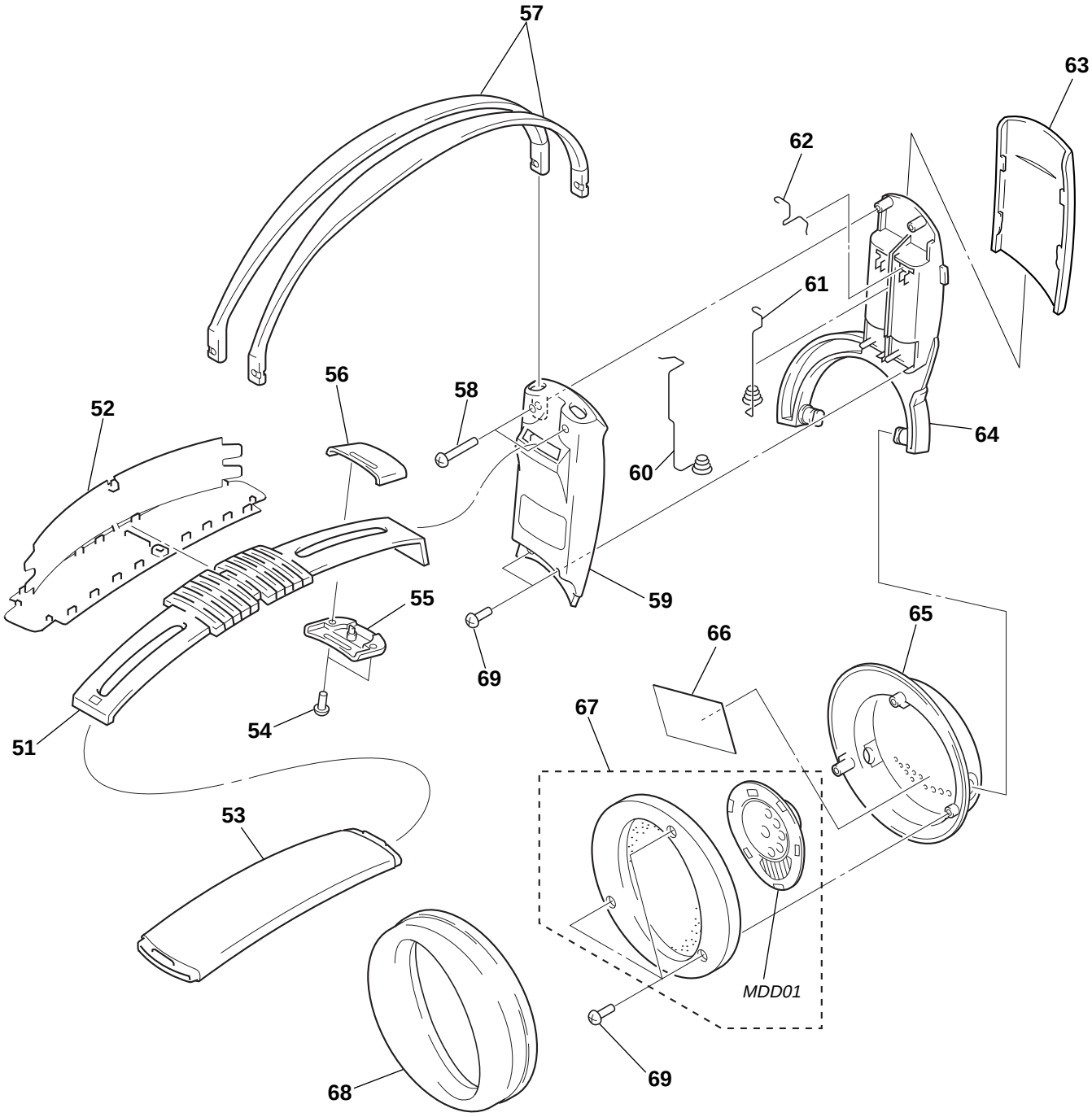
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

(1) HEADPHONE (R) SECTION



Ref. No.	Part No.	Description	Remark
1	4-971-700-01	PAD, EAR	
2	X-4950-190-1	PLATE (R) ASSY, FRONT	
3	4-999-774-01	REGISTER, HOUSING	
4	4-999-773-01	HOUSING (R)	
5	4-999-769-11	COVER (R), HANGER	
* 6	A-4542-518-A	RX-BASE BOARD, COMPLETE	
7	4-210-255-01	SUPPORT, SWITCH	
* 8	1-670-527-11	SW BOARD	
9	4-999-767-01	HANGER (R)	
10	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	
11	4-966-791-11	STOPPER (UPPER)	
12	4-966-792-11	STOPPER (LOWER)	
13	3-318-203-62	SCREW (B1.7X4), TAPPING	
14	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
MDD02	1-505-117-21	DRIVER (R-CH)	

(2) HEADPHONE (L) SECTION



Ref. No.	Part No.	Description	Remark
51	4-999-771-01	SUSPENDER	
52	4-978-518-02	BASE, SUSPENDER	
53	4-978-519-01	CUSHION, HEAD	
54	3-318-203-62	SCREW (B1.7X4), TAPPING	
55	4-966-792-11	STOPPER (LOWER)	
56	4-966-791-11	STOPPER (UPPER)	
57	4-999-765-01	BAND, HEAD	
58	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	
59	4-999-766-11	HANGER (L) (US)	
59	4-999-766-21	HANGER (L) (Canadian)	
60	4-210-258-01	TERMINAL (MIDWAY), BATTERY	

Ref. No.	Part No.	Description	Remark
61	4-210-257-01	TERMINAL (-), BATTERY	
62	4-210-256-01	TERMINAL (+), BATTERY	
63	4-999-770-11	LID, BATTERY CASE	
64	4-999-768-01	COVER (L), HANGER	
65	4-999-772-01	HOUSING (L)	
66	4-999-774-01	REGISTER, HOUSING	
67	X-4950-189-1	PLATE (L) ASSY, FRONT	
68	4-971-700-01	PAD, EAR	
69	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
MDD01	1-505-117-21	DRIVER (L-CH)	

SECTION 6
ELECTRICAL PARTS LIST

FE | **RX-BASE**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		FE BOARD			
		*********			
		(Included in RX-BASE BOARD, COMPLETE)			
		< CAPACITOR >			
C1	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
C2	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C3	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C4	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V
C5	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C6	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C8	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C9	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C10	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V
C12	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C13	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V
C14	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C15	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C16	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
C17	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C20	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C21	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C23	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
C24	1-162-906-11	CERAMIC CHIP	1.5PF	0.25PF	50V
C28	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C30	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C39	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C40	1-162-909-11	CERAMIC CHIP	4PF	0.25PF	50V
C41	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C43	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C44	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
		< IC >			
IC1	8-759-469-63	IC S-81215SGUP-DQK-T1			
		< RESISTOR >			
JR1	1-216-864-11	METAL CHIP	0	5%	1/16W
JR2	1-216-864-11	METAL CHIP	0	5%	1/16W
		< COIL >			
L1	1-469-237-21	INDUCTOR	0.68uH		
L2	1-469-237-21	INDUCTOR	0.68uH		
L3	1-414-665-11	INDUCTOR CHIP	12nH		
L4	1-414-665-11	INDUCTOR CHIP	12nH		
L5	1-414-660-11	INDUCTOR CHIP	4.7nH		
L6	1-414-660-11	INDUCTOR CHIP	4.7nH		
		< TRANSISTOR >			
Q1	8-729-046-22	FET 3SK240 (TE85L)			
Q3	8-729-230-81	TRANSISTOR 2SC3606			
Q4	8-729-232-73	TRANSISTOR 2SC4320 (TE85L)			
		< RESISTOR >			
R1	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7	1-216-809-11	METAL CHIP	100	5%	1/16W
R8	1-218-293-11	RES,CHIP	24K	5%	1/16W
R10	1-216-845-11	METAL CHIP	100K	5%	1/16W
R11	1-216-810-11	METAL CHIP	120	5%	1/16W
R12	1-216-809-11	METAL CHIP	100	5%	1/16W
		< CAPACITOR >			
THC1	1-104-511-51	CERAMIC	0.001uF		
THC2	1-111-231-43	CERAMIC	2PF	99%	
THC3	1-111-231-43	CERAMIC	2PF	99%	
		< SAW RESONANTOR >			
X1	1-767-906-11	RESONANTOR, SAW			
**********					
*	A-4542-518-A	RX-BASE BOARD, COMPLETE			
		**********			
		(Including FE BOARD)			
		< CAPACITOR >			
C301	1-126-154-11	ELECT	47uF	20%	6.3V
C302	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C303	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C306	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C307	1-163-121-11	CERAMIC CHIP	150PF	5%	50V
C309	1-126-572-11	ELECT	4.7uF	20%	35V
C310	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

RX-BASE

Ref. No.	Part No.	Description			Remark
C311	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C312	1-163-021-00	CERAMIC CHIP	0.01uF	10%	50V
C313	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C314	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C315	1-124-233-11	ELECT	10uF	20%	16V
C316	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C317	1-163-021-00	CERAMIC CHIP	0.01uF	10%	50V
C318	1-164-346-11	CERAMIC CHIP	1uF		16V
C319	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C320	1-164-346-11	CERAMIC CHIP	1uF		16V
C321	1-164-346-11	CERAMIC CHIP	1uF		16V
C322	1-124-242-00	ELECT	33uF	20%	25V
C323	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C324	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C325	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C326	1-124-434-00	ELECT	220uF	20%	4V
C327	1-124-434-00	ELECT	220uF	20%	4V
C328	1-124-434-00	ELECT	220uF	20%	4V
C329	1-164-346-11	CERAMIC CHIP	1uF		16V
C330	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C331	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V
C332	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C333	1-163-021-00	CERAMIC CHIP	0.01uF	10%	50V
C334	1-124-233-11	ELECT	10uF	20%	16V
C335	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C336	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C337	1-163-021-00	CERAMIC CHIP	0.01uF	10%	50V
C338	1-163-037-11	CERAMIC CHIP	0.022uF	10%	50V
C339	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C340	1-164-346-11	CERAMIC CHIP	1uF		16V
C341	1-164-161-11	CERAMIC CHIP	2200PF	5%	50V
C350	1-163-021-00	CERAMIC CHIP	0.01uF	10%	50V
		< CERAMIC FILTER >			
CF301	1-577-588-11	FILTER, CERAMIC			
CF302	1-567-163-11	FILTER, CERAMIC			
		< DIODE >			
D301	8-719-045-99	DIODE RD2.2M-T1B			
D302	8-719-002-81	DIODE 1T363			
D303	8-719-066-69	LED BR2434D (POWER)			
		< IC >			
IC301	8-752-066-93	IC CXA1611N-T4			
IC302	8-759-802-75	IC LA4533M			
IC303	8-759-195-02	IC TC7S86F-TE85L			
IC304	8-759-096-87	IC TC7WU04FU(TE12R)			
		< SHORT >			
JR301	1-216-296-00	SHORT	0		
JR302	1-216-296-00	SHORT	0		
JR303	1-216-296-00	SHORT	0		
JR304	1-216-296-00	SHORT	0		
JR305	1-216-296-00	SHORT	0		
JR306	1-216-295-00	SHORT	0		
JR308	1-216-295-00	SHORT	0		
JR309	1-216-295-00	SHORT	0		
JR310	1-216-295-00	SHORT	0		
JR311	1-216-295-00	SHORT	0		
JR312	1-216-295-00	SHORT	0		
JR313	1-216-295-00	SHORT	0		
JR314	1-216-295-00	SHORT	0		
JR315	1-216-295-00	SHORT	0		
JR316	1-216-296-00	SHORT	0		
		< COIL >			
L301	1-416-796-11	COIL, AIR-CORE			
L302	1-412-933-11	INDUCTOR	0.33uH		
		< TRANSISTOR >			
Q301	8-729-230-49	TRANSISTOR	2SC2712-YG		
Q302	8-729-230-49	TRANSISTOR	2SC2712-YG		
Q303	8-729-230-49	TRANSISTOR	2SC2712-YG		
Q304	8-729-230-49	TRANSISTOR	2SC2712-YG		
Q305	8-729-230-49	TRANSISTOR	2SC2712-YG		
Q306	8-729-920-31	TRANSISTOR	DTC343TK		
Q307	8-729-230-49	TRANSISTOR	2SC2712-YG		
Q308	8-729-040-78	TRANSISTOR	DTA124GKA-T146		
Q309	8-729-027-36	TRANSISTOR	DTA143XKA-T146		
		< RESISTOR >			
R301	1-216-121-00	RES,CHIP	1M	5%	1/10W
R302	1-216-101-00	METAL CHIP	150K	5%	1/10W
R303	1-216-081-00	METAL CHIP	22K	5%	1/10W
R304	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R305	1-216-103-00	RES,CHIP	180K	5%	1/10W
R306	1-216-113-00	METAL CHIP	470K	5%	1/10W
R307	1-216-097-00	RES,CHIP	100K	5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-089-00	RES,CHIP	47K	5%	1/10W
R310	1-216-041-00	METAL CHIP	470	5%	1/10W
R311	1-216-049-11	RES,CHIP	1K	5%	1/10W
R312	1-216-113-00	METAL CHIP	470K	5%	1/10W
R313	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R314	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R315	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R316	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R317	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R318	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R319	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R320	1-216-097-00	RES,CHIP	100K	5%	1/10W
R321	1-216-093-00	METAL CHIP	68K	5%	1/10W
R322	1-216-093-00	METAL CHIP	68K	5%	1/10W
R323	1-216-125-00	METAL CHIP	1.5M	5%	1/10W
R324	1-216-025-00	RES,CHIP	100	5%	1/10W
R325	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R326	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R327	1-216-025-00	RES,CHIP	100	5%	1/10W
R328	1-216-077-00	METAL CHIP	15K	5%	1/10W
R329	1-216-001-00	METAL CHIP	10	5%	1/10W
R330	1-216-001-00	METAL CHIP	10	5%	1/10W
R331	1-216-097-00	RES,CHIP	100K	5%	1/10W
R334	1-216-097-00	RES,CHIP	100K	5%	1/10W
R335	1-216-029-00	METAL CHIP	150	5%	1/10W
R342	1-216-062-11	RES,CHIP	3.6K	5%	1/10W
R345	1-216-089-11	METAL CHIP	47K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R348	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R349	1-216-001-00	METAL CHIP	10	5%	1/10W
R350	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
		< VARIABLE RESISTOR >			
RV301	1-223-968-11	RES, VAR, CARBON 20K/20K (VOL)			
RV302	1-225-641-11	RES, VAR, CARBON 10K (TUNING)			
RV303	1-238-857-11	RES, ADJ, CERMET 22K			
**********					
*	1-670-527-11	SW BOARD			
		*********			
		< SWITCH >			
SW1	1-572-467-61	SWITCH, PUSH (1 KEY) (POWER)			
**********					
		MISCELLANEOUS			
		**********			
MDD01	1-505-117-21	DRIVER (L-CH)			
MDD02	1-505-117-21	DRIVER (R-CH)			

9-924-925-11

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